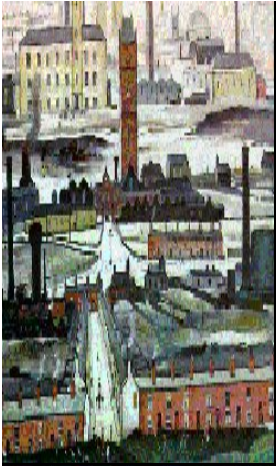


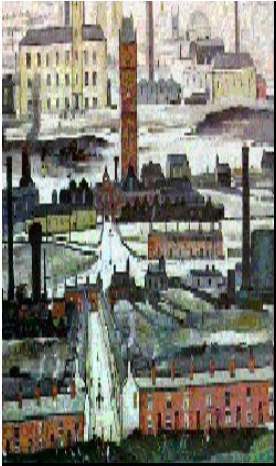
The Industrial Revolution





Late 18^c: French Economic Advantages

- ✓ Napoleonic Code.
- ✓ French communal law.
 -) Free contracts
 -) Open markets
 -) Uniform & clear commercial regulations
- ✓ Standards weights & measures.
- ✓ Established technical schools.
- ✓ The government encouraged & honored inventors & inventions.
- ✓ Bank of France → European model providing a reliable currency.



French Economic Disadvantages

- ✓ Years of war
 -) Supported the American Revolution.
 -) French Revolution.
 -) Early 19c → Napoleonic Wars
- ✓ Heavy debts.
- ✓ High unemployment → soldiers returning from the battlefronts.
- ✓ French businessmen were afraid to take risks.



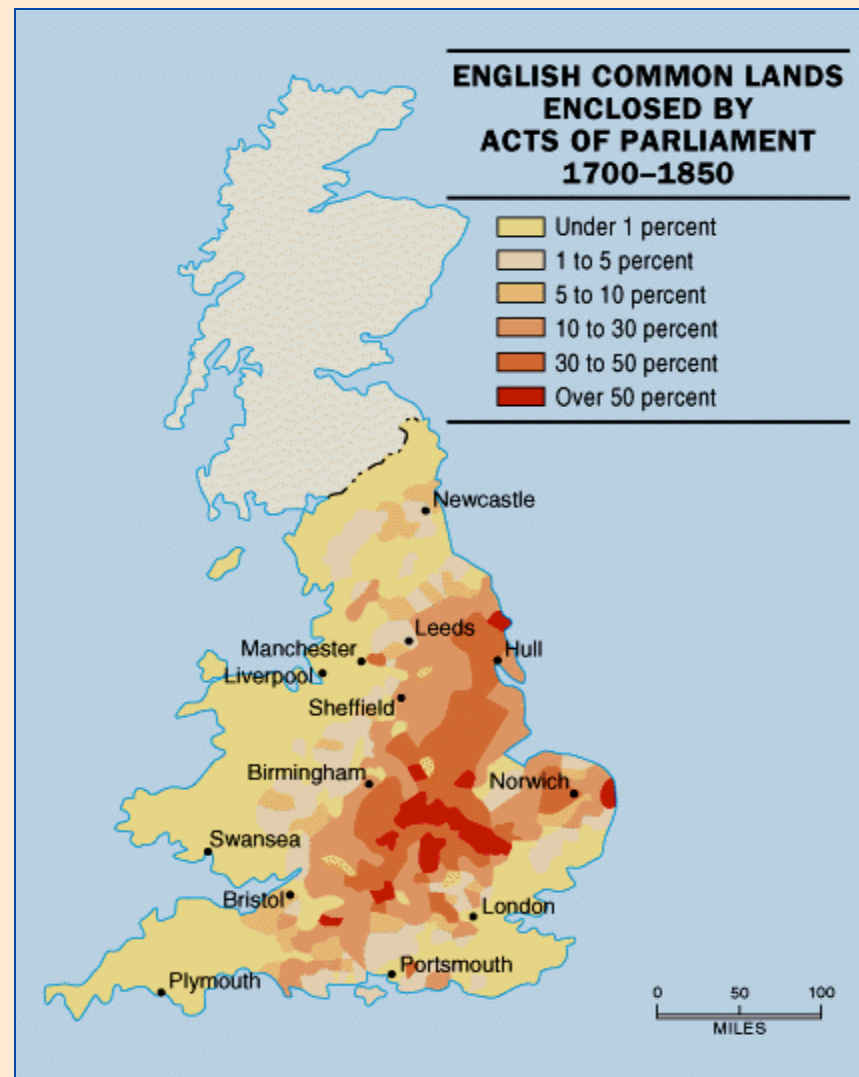
Why Did Industrialization Begin in England First?



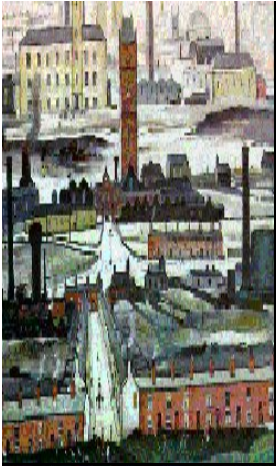
Industrial England: "Workshop of the World"

That Nation of Shopkeepers!
-- Napoleon Bonaparte

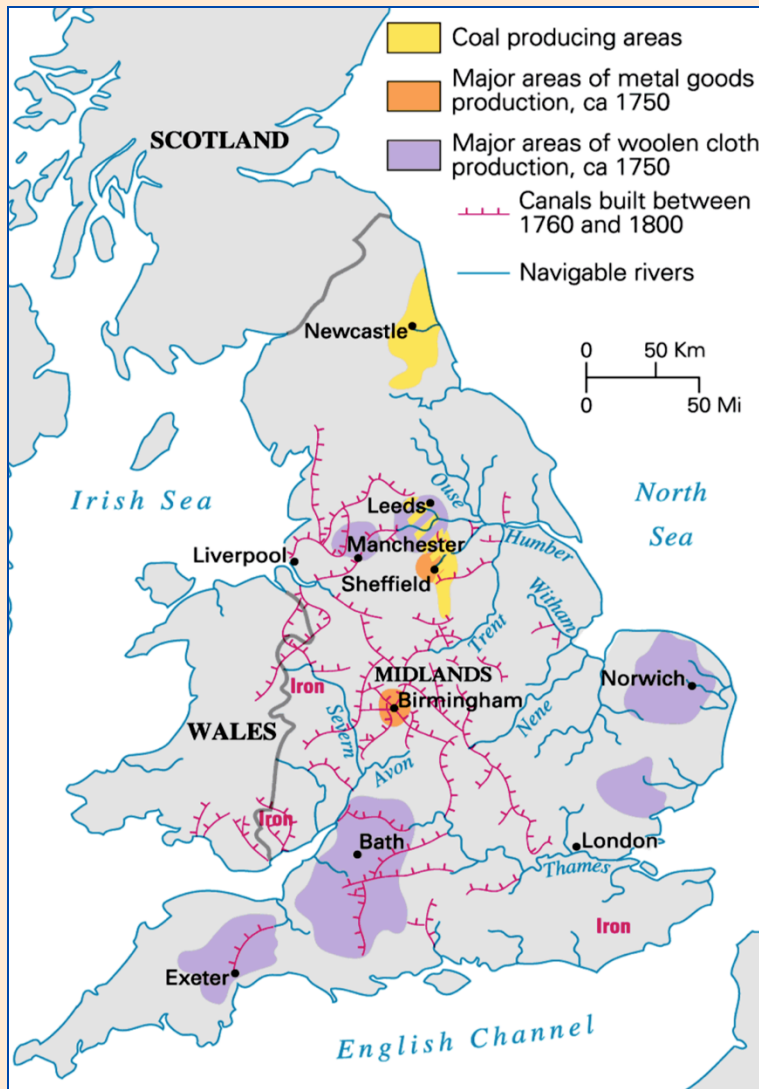
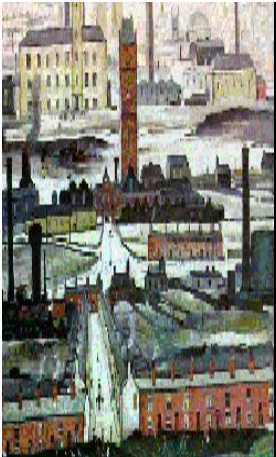
The Enclosure Movement



“Enclosed” Lands Today



Metals, Woolens, & Canals



INDUSTRIAL CITIES-Great Britain-1830's

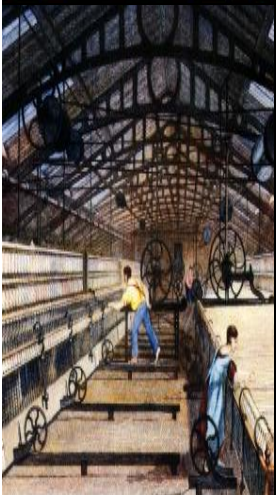


Base your answer to question 24 on the map below and on your knowledge of social studies.

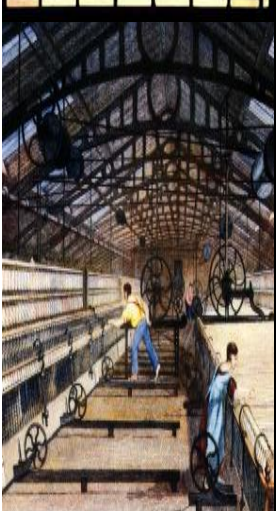
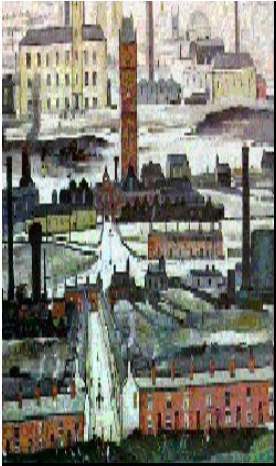


Source: Beers, *World History: Patterns of Civilization*, 1983 (adapted)

Early Canals



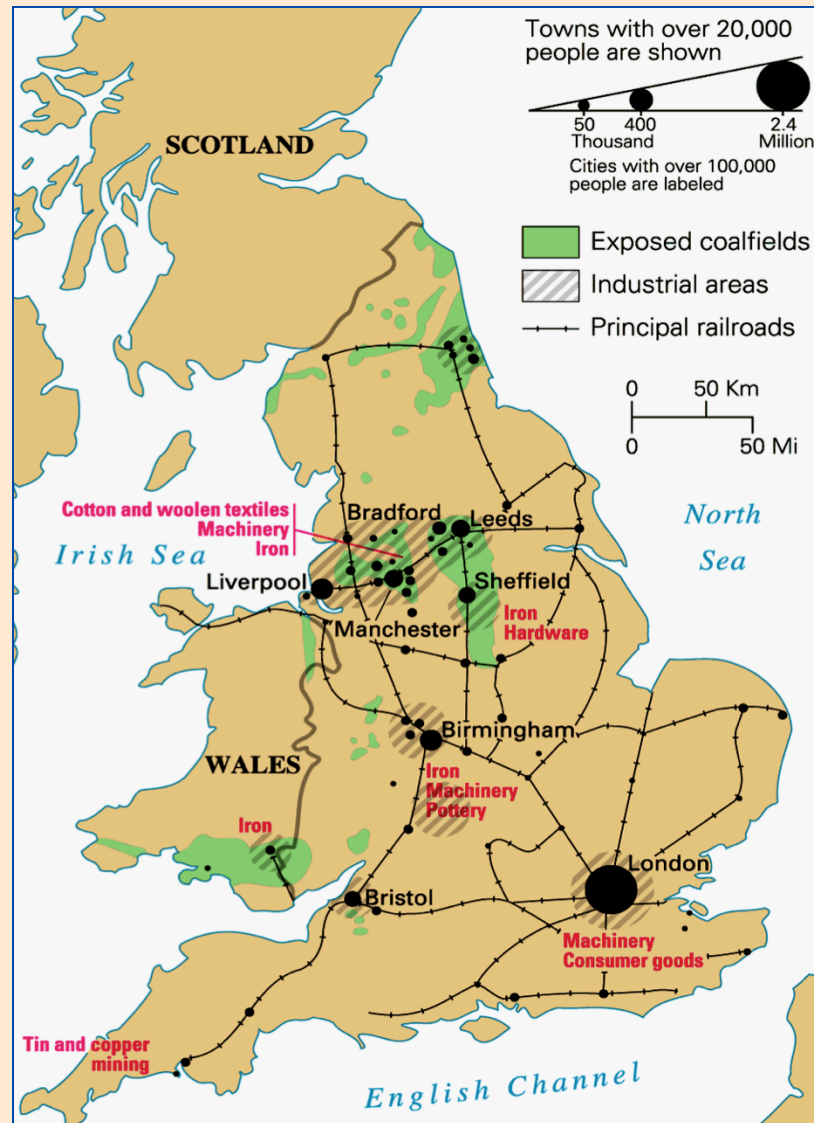
Britain's Earliest
Transportation
Infrastructure

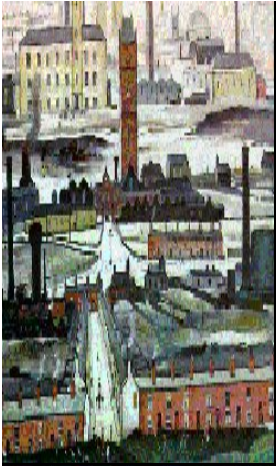


Mine & Forge [1840-1880]

- ù More powerful than water is coal.
- ù More powerful than wood is iron.
- ù Innovations make steel feasible.
 - “Puddling” [1820] - “pig iron.”
 - “Hot blast” [1829] - cheaper, purer steel.
 - Bessemer process [1856] - strong, flexible steel.

Coalfields & Industrial Areas

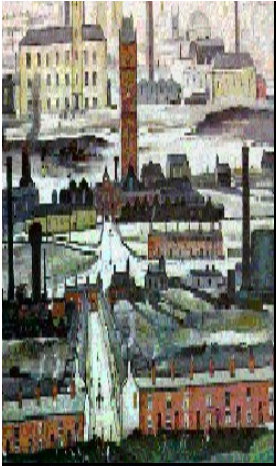




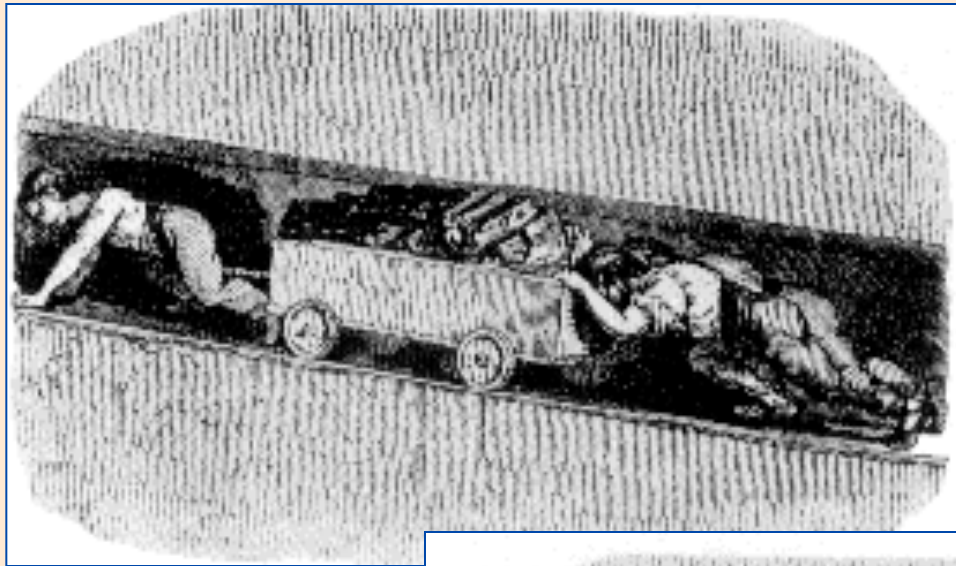
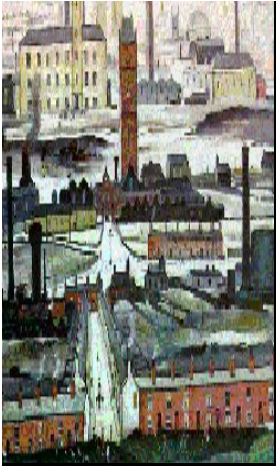
Coal Mining in Britain: 1800-1914

1800	1 ton of coal	50, 000 miners
1850	30 tons	200, 000 miners
1880	300 million tons	500, 000 miners
1914	250 million tons	1, 200, 000 miners

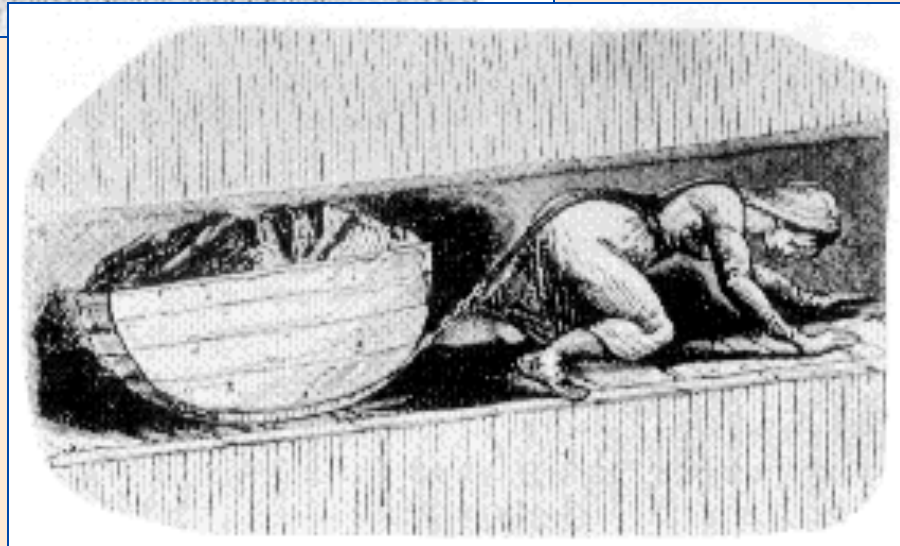
Young Coal Miners



Child Labor in the Mines

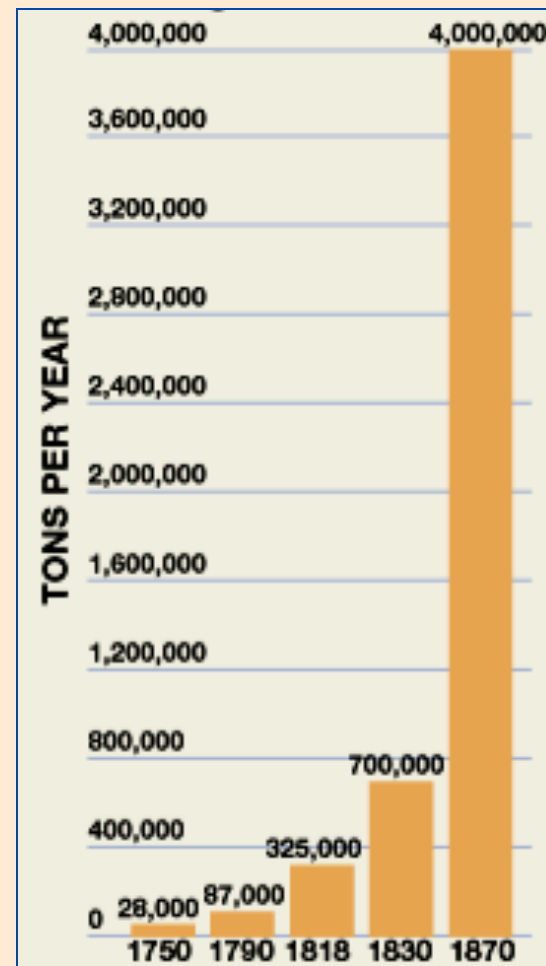


Child
“hurriers”





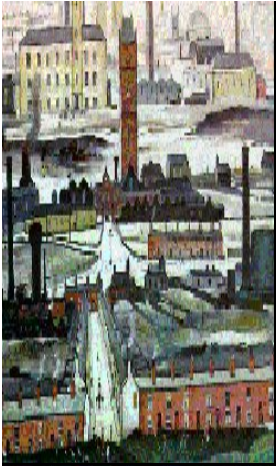
British Pig Iron Production



Richard Arkwright: “Pioneer of the Factory System”

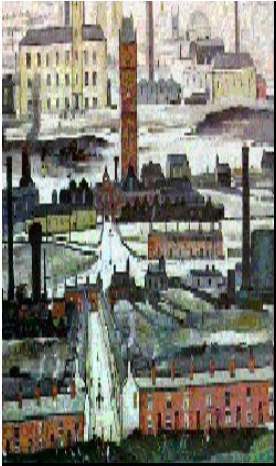


The “Water Frame”



Factory Production

-) Concentrates production in one place [materials, labor].
-) Located near sources of power [rather than labor or markets].
-) Requires a lot of capital investment [factory, machines, etc.] more than skilled labor.
-) Only 10% of English industry in 1850.



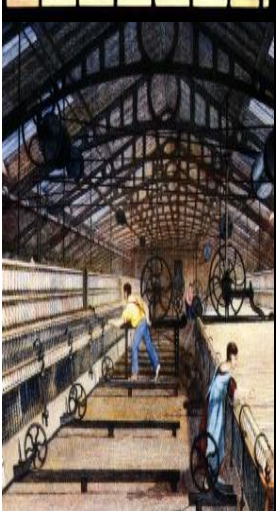
Textile Factory Workers in England



1813	2400 looms	150, 000 workers
1833	85, 000 looms	200, 000 workers
1850	224, 000 looms	>1 million workers

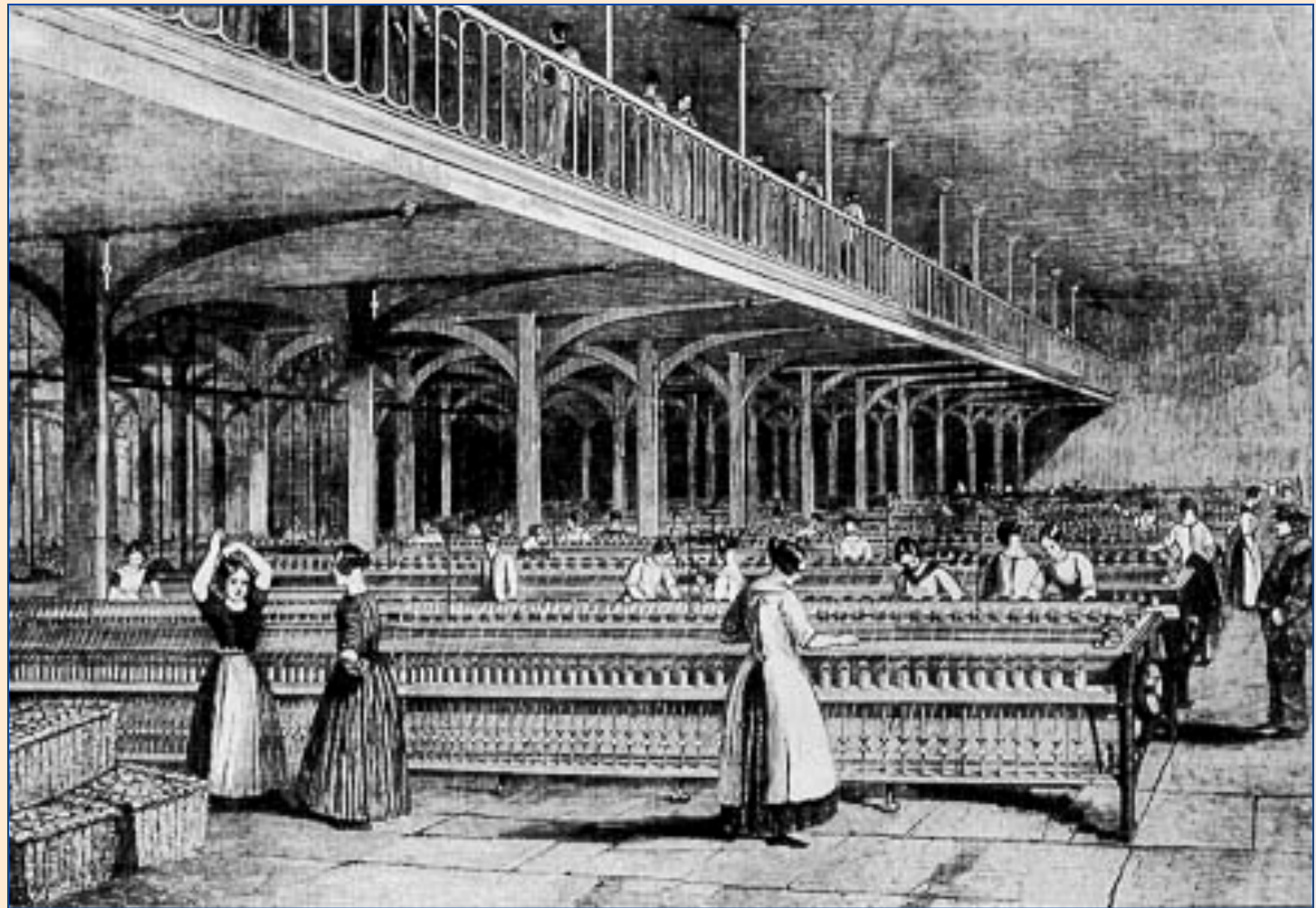
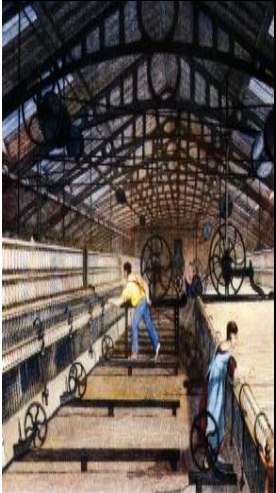
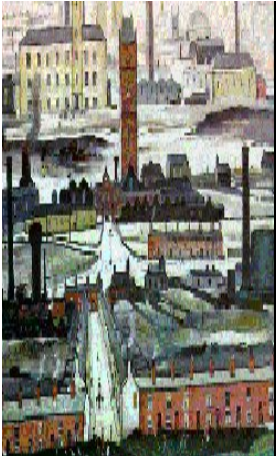


The Factory System

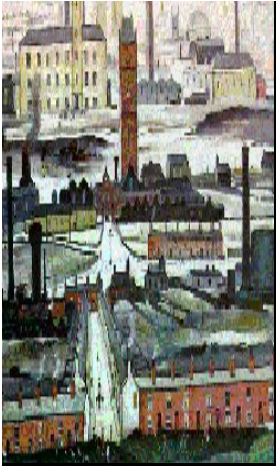


- × Rigid schedule.
- × 12-14 hour day.
- × Dangerous conditions.
- × Mind-numbing monotony.

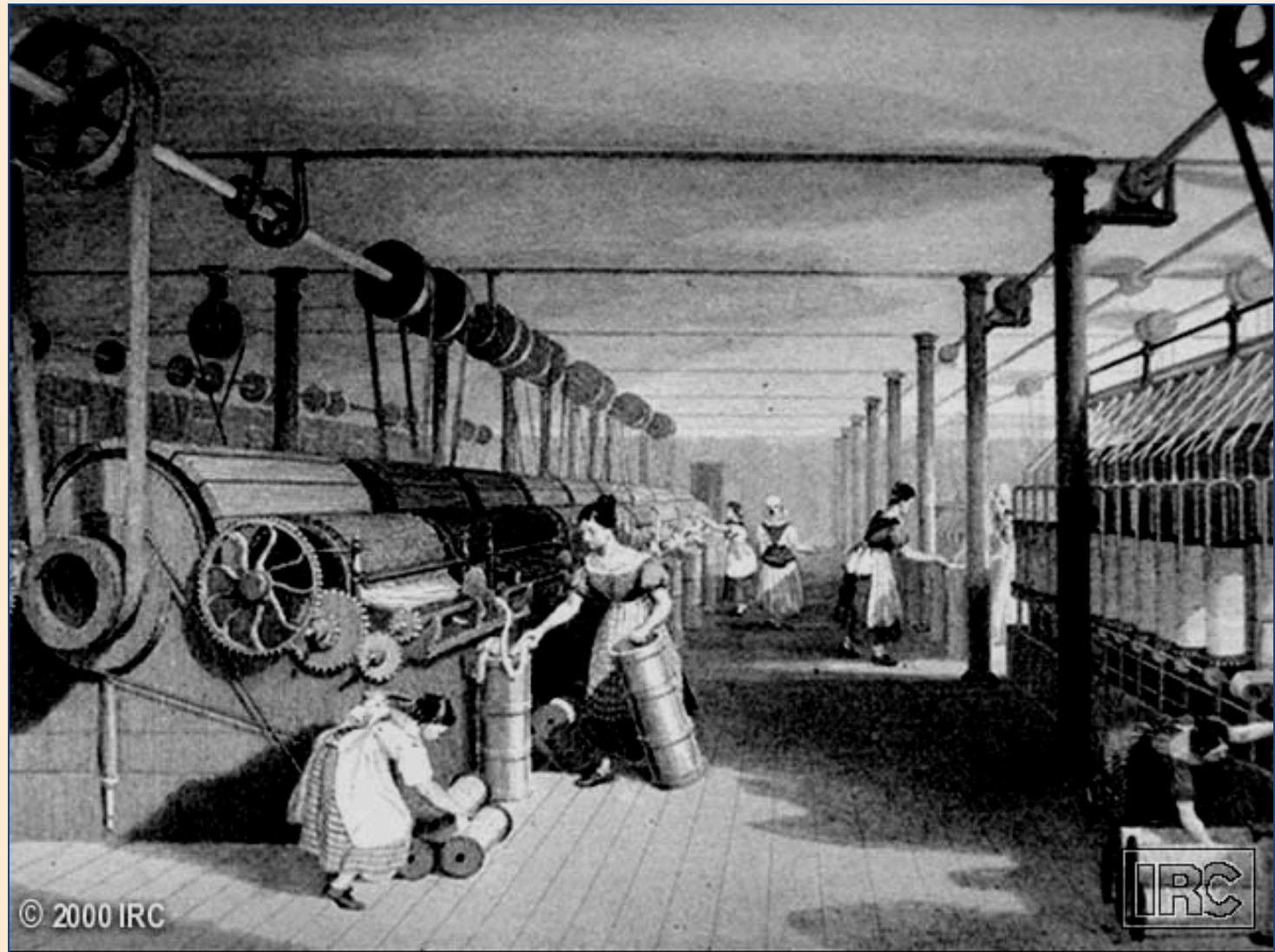
Textile Factory Workers in England



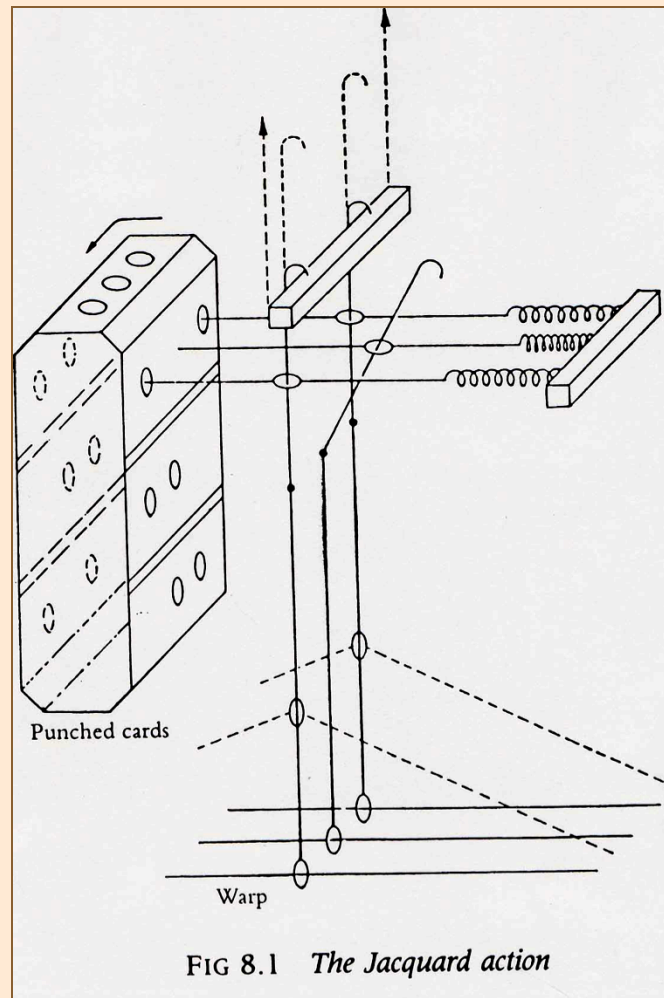
British Coin Portraying a Factory, 1812



Young “Bobbin-Doffers”



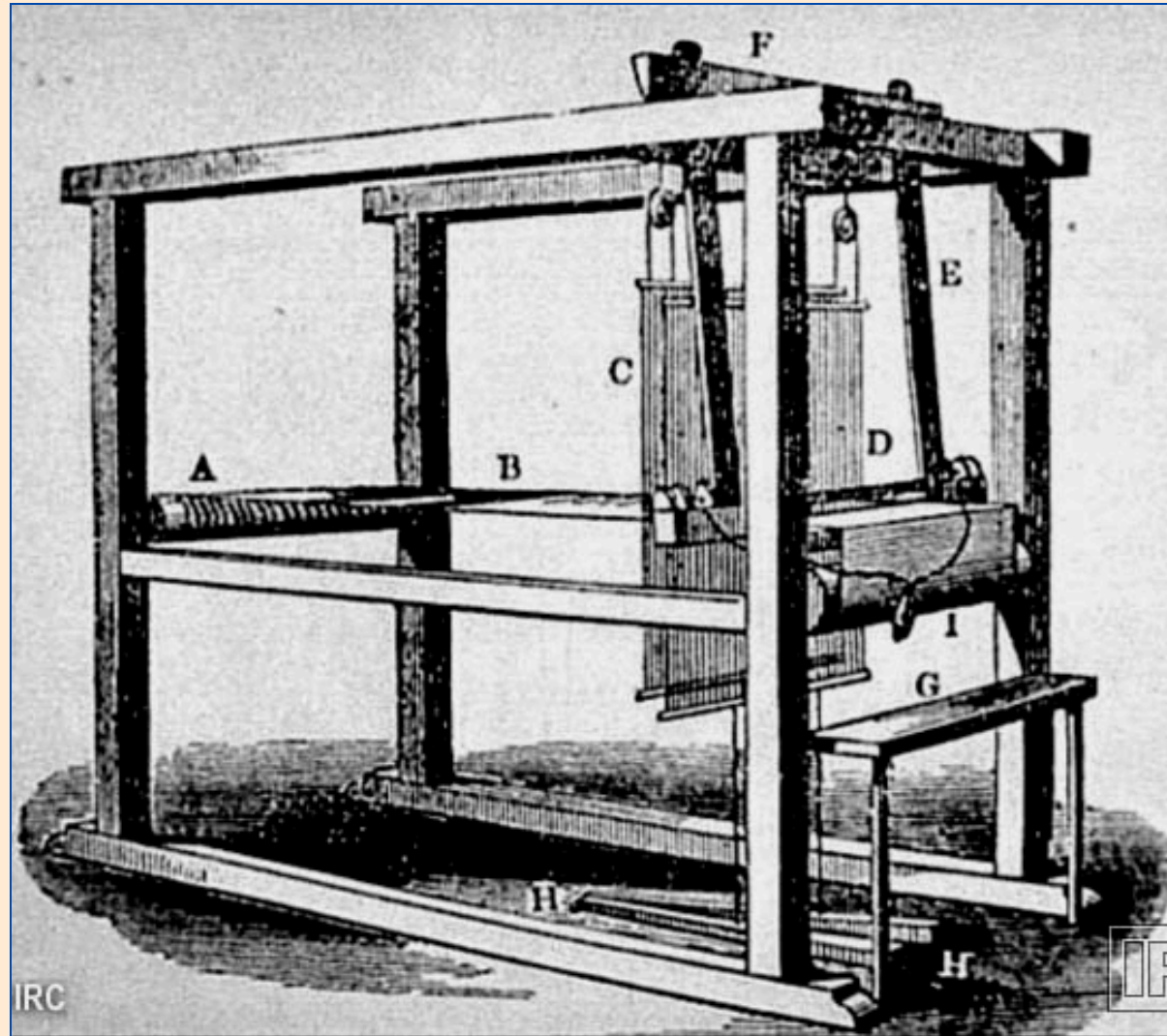
Jacquard's Loom





New Inventions of the Industrial Revolution

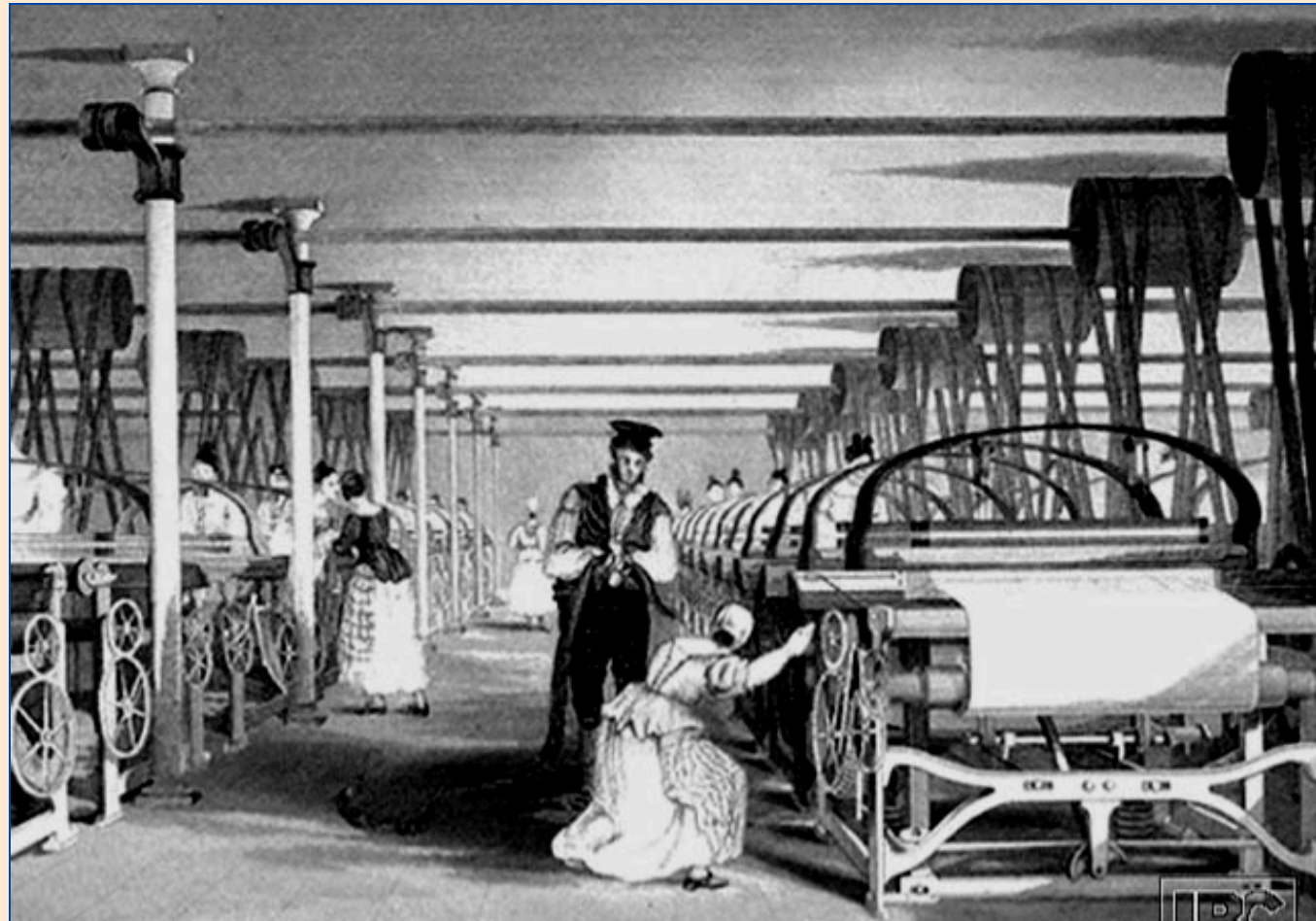
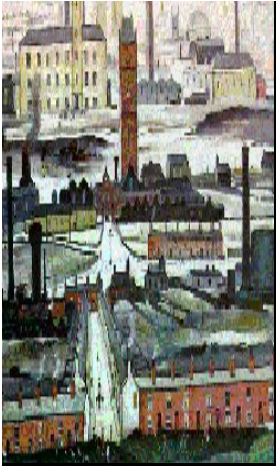
John Kay's "Flying Shuttle"



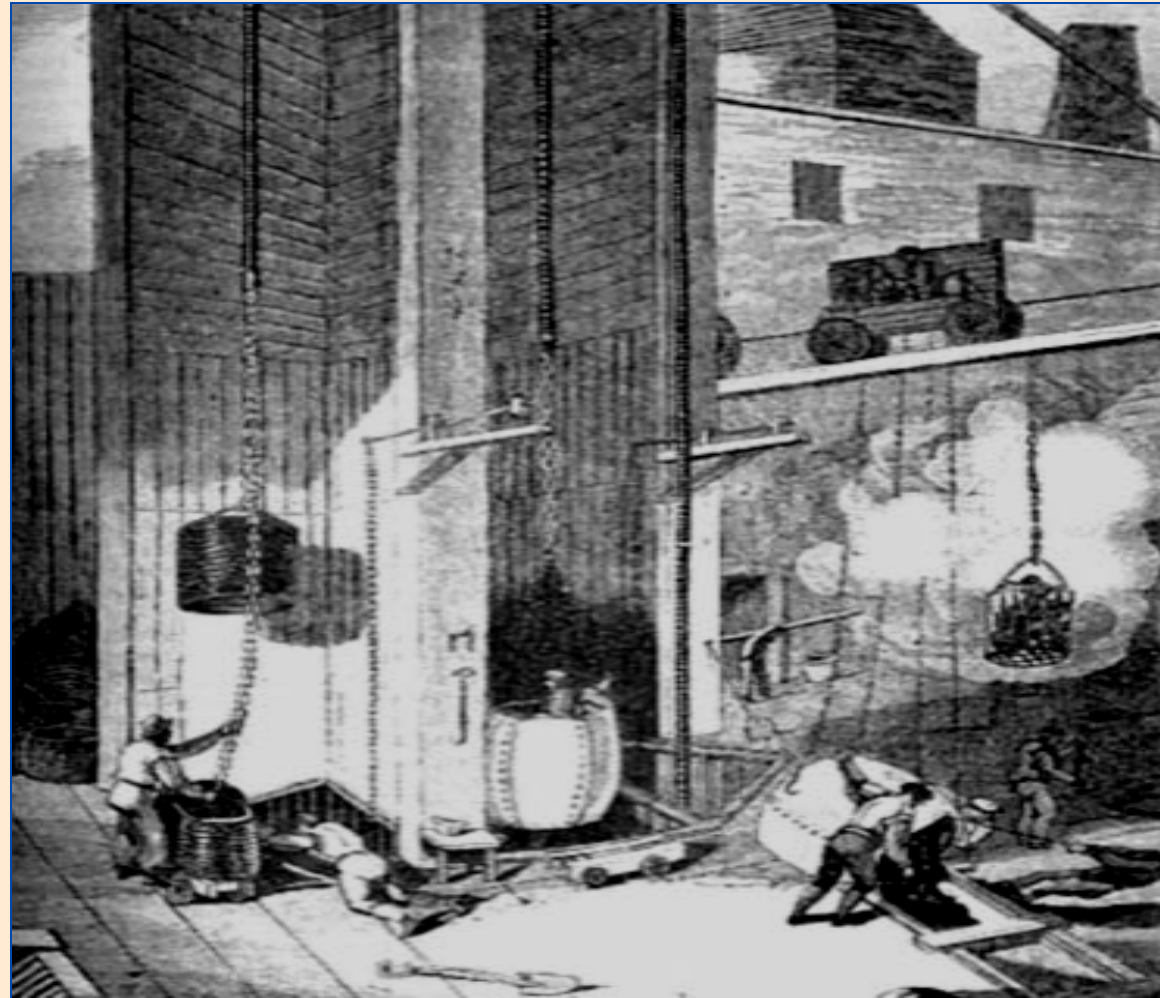
IRC



The Power Loom



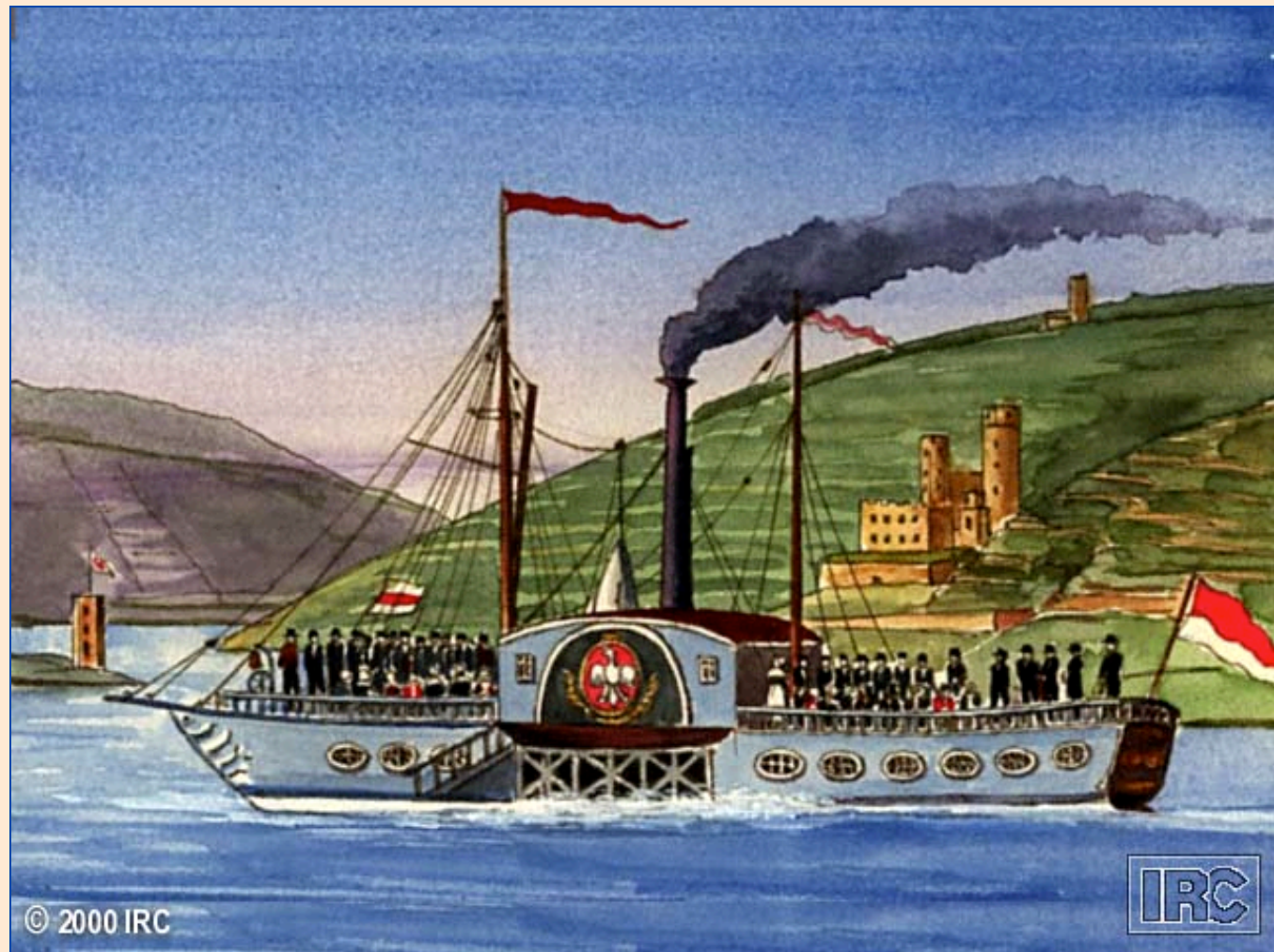
James Watt's Steam Engine



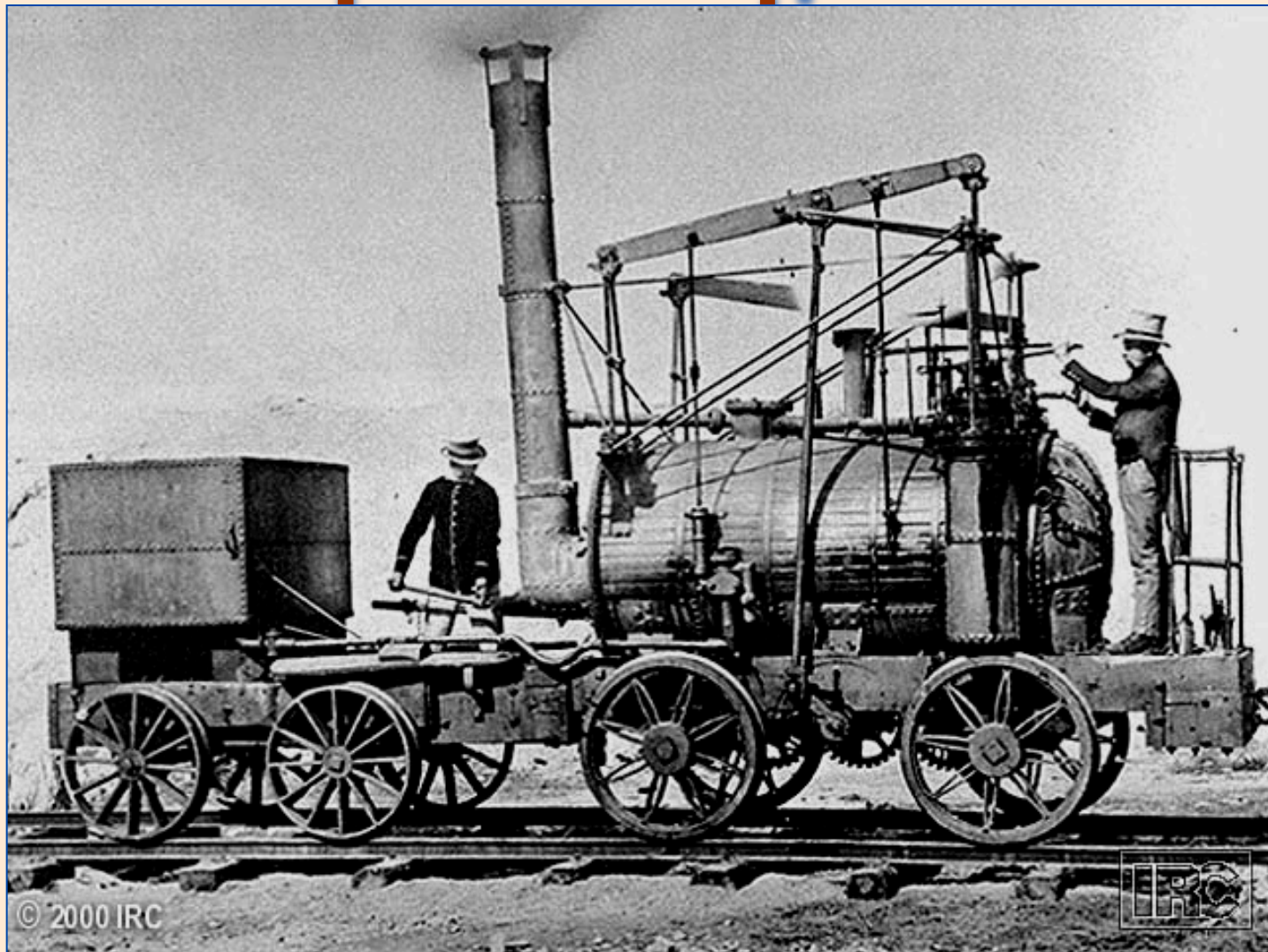
Steam Tractor



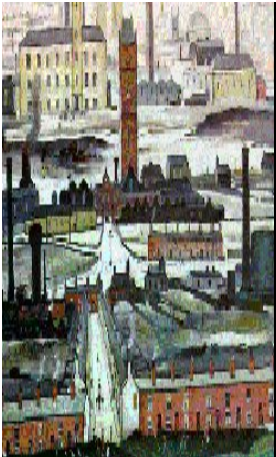
Steam Ship



An Early Steam





Later Locomotives

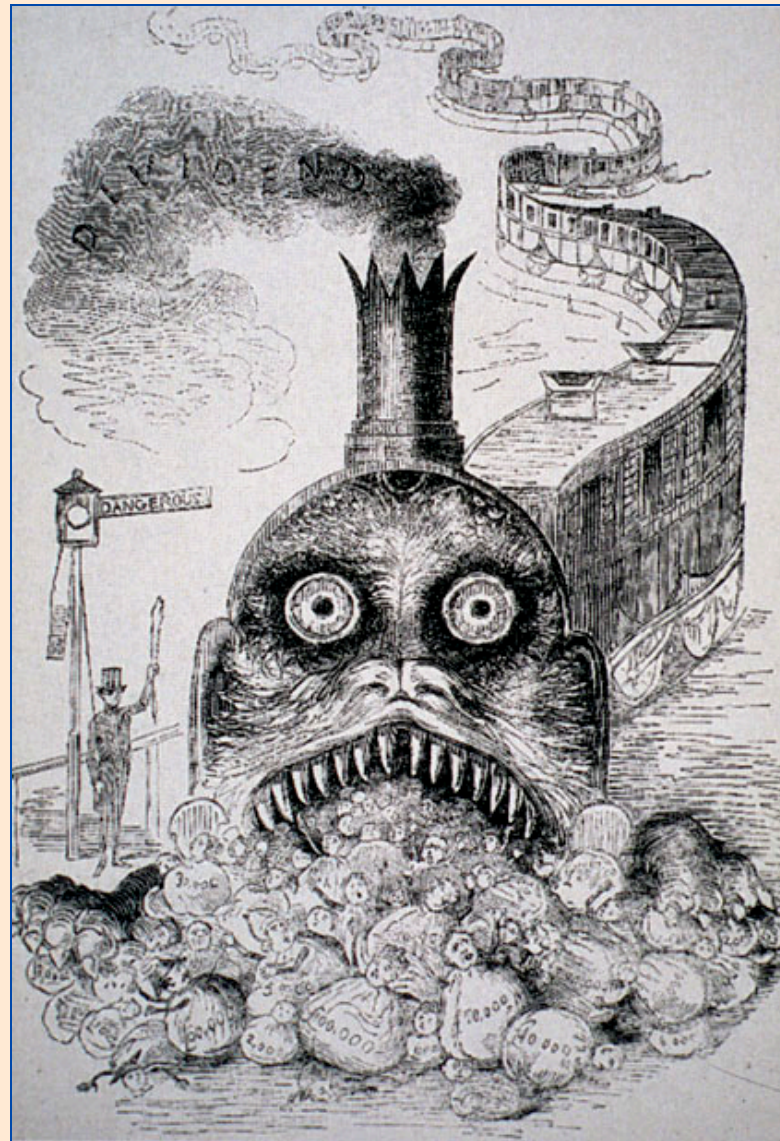


The Impact of the Railroad



1836		1850	
			
JOURNEY TIMES FROM LONDON (IN HOURS)			
43	EDINBURGH	12 $\frac{1}{4}$	
24	LIVERPOOL	6 $\frac{1}{2}$	
18	EXETER	4 $\frac{3}{4}$	
11	BIRMINGHAM	3	
6	BRIGHTON	1 $\frac{1}{4}$	

“The Great Land Serpent”



Crystal Palace Exhibition: 1851



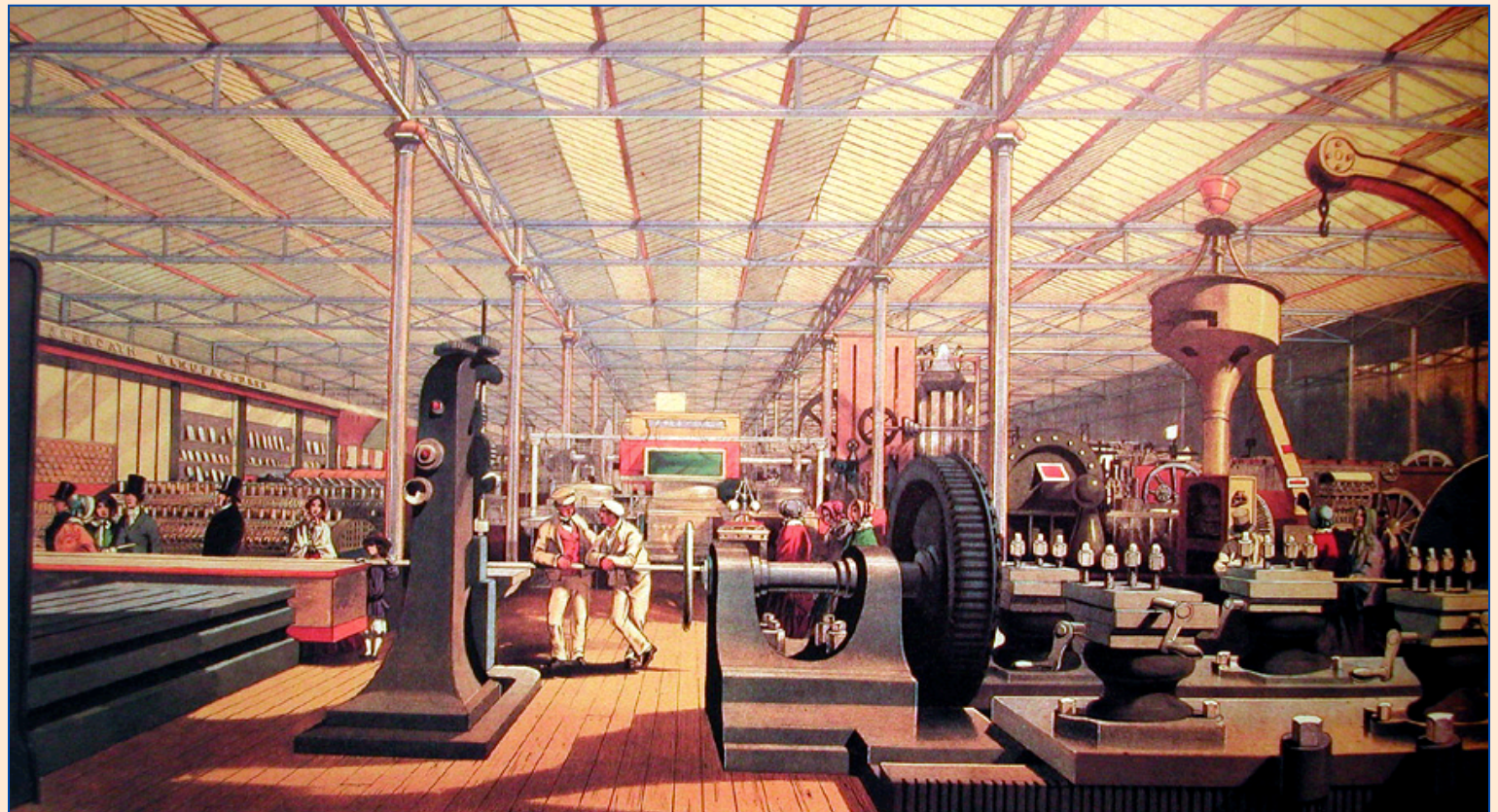
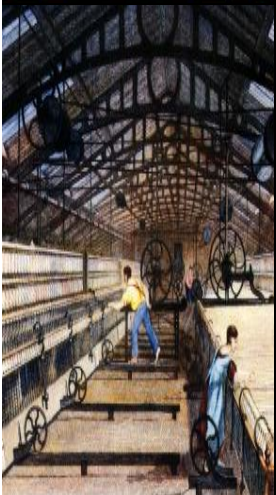
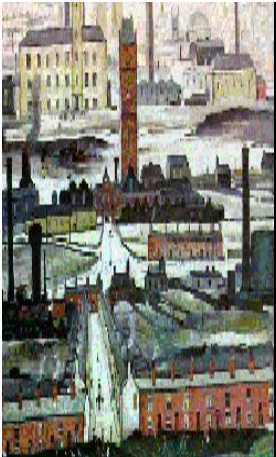
Exhibitions of the new industrial utopia.



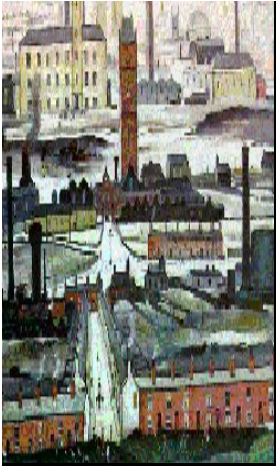
Crystal Palace: Interior Exhibits



Crystal Palace: British Ingenuity on Display



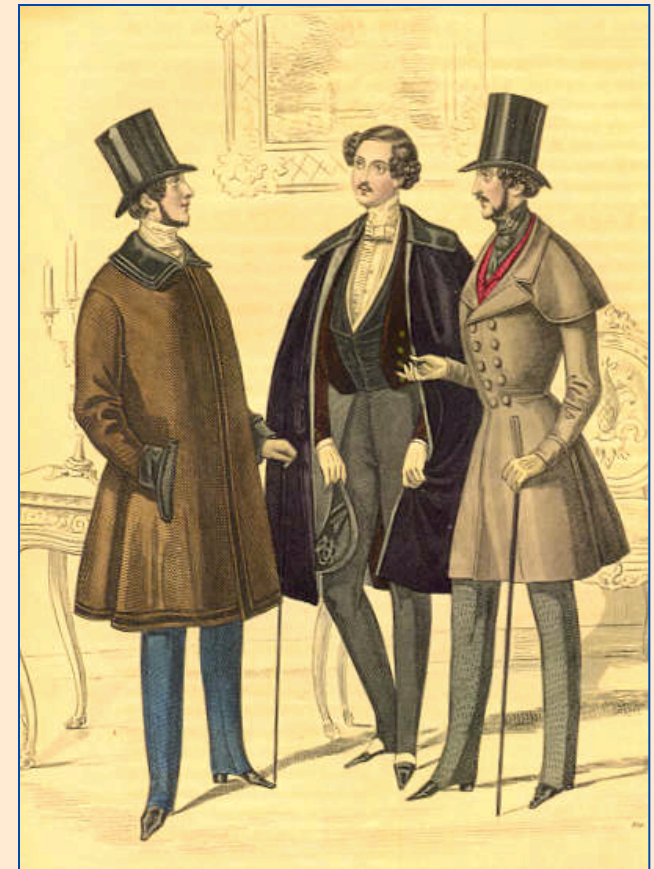
Crystal Palace: American Pavilion



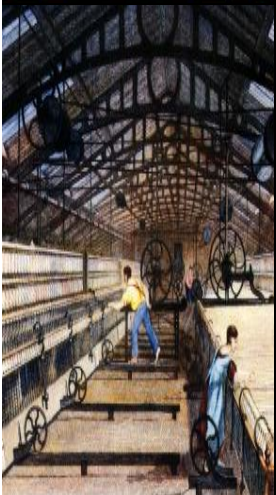
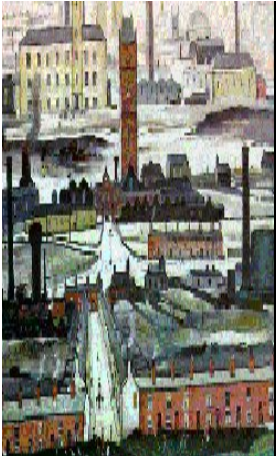


The "Haves": Bourgeois Life Thrived on the Luxuries of the Industrial Revolution

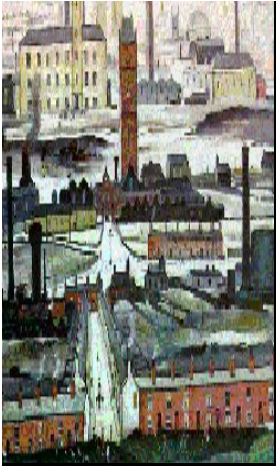
19^c Bourgeoisie: The Industrial *Nouveau Riche*



Criticism of the New Bourgeoisie



Stereotype of the Factory Owner



“Upstairs”/“Downstairs”

Life





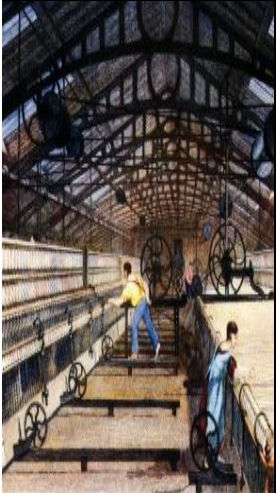
The "Have-Nots": The Poor, The Over-Worked, & the Destitute

Factory Wages in Lancashire, 1830

Age of Worker	Male Wages	Female Wages
under 11	2s 3d.	2s. 4d.
11 - 16	4s. 1d.	4s. 3d.
17 - 21	10s. 2d.	7s. 3d.
22 - 26	17s. 2d.	8s. 5d.
27 - 31	20s. 4d.	8s. 7d.
32 - 36	22s. 8d.	8s. 9d.
37 - 41	21s. 7d.	9s. 8d.
42 - 46	20s. 3d.	9s. 3d.
47 - 51	16s. 7d.	8s. 10d.
52 - 56	16s. 4d.	8s. 4d.
57 - 61	13s. 6d.	6s. 4d.



Industrial Staffordshire



Problems of Polution



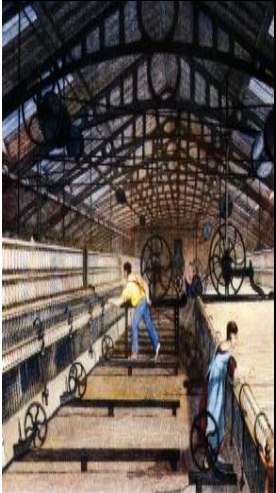
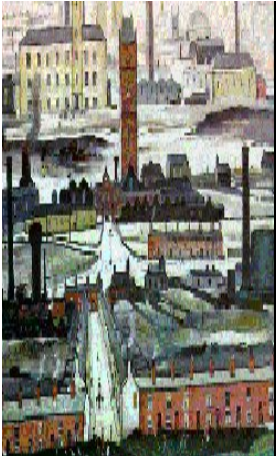
The Silent Highwayman - 1858



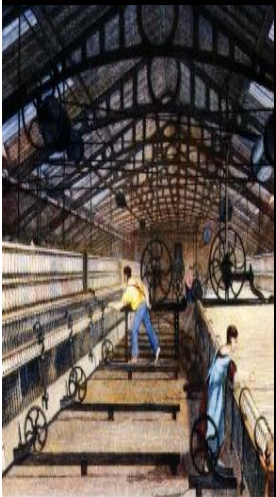
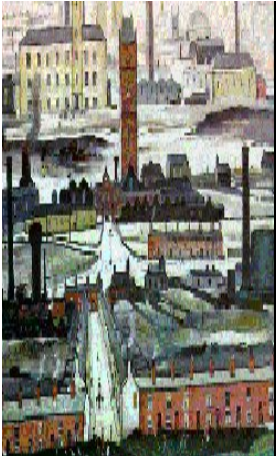
The New Industrial City



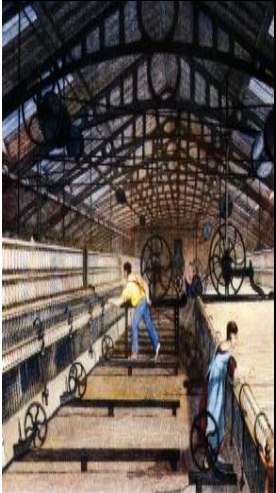
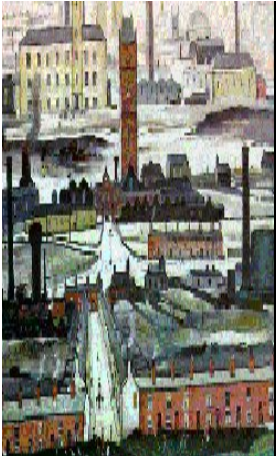
Early-19c London by Gustave Dore



Worker Housing in Manchester



Factory Workers at Home



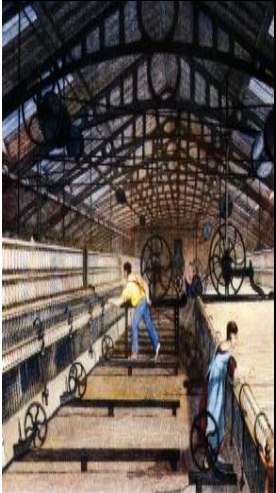
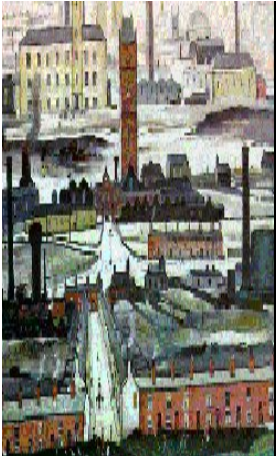
Workers Housing in Newcastle Today



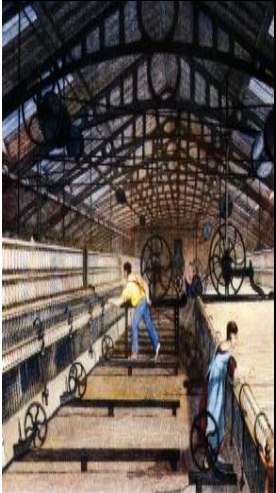
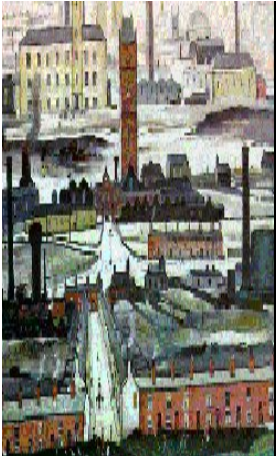
The Life of the New Urban Poor: A Dickensian Nightmare!



Private Charities: Soup Kitchens



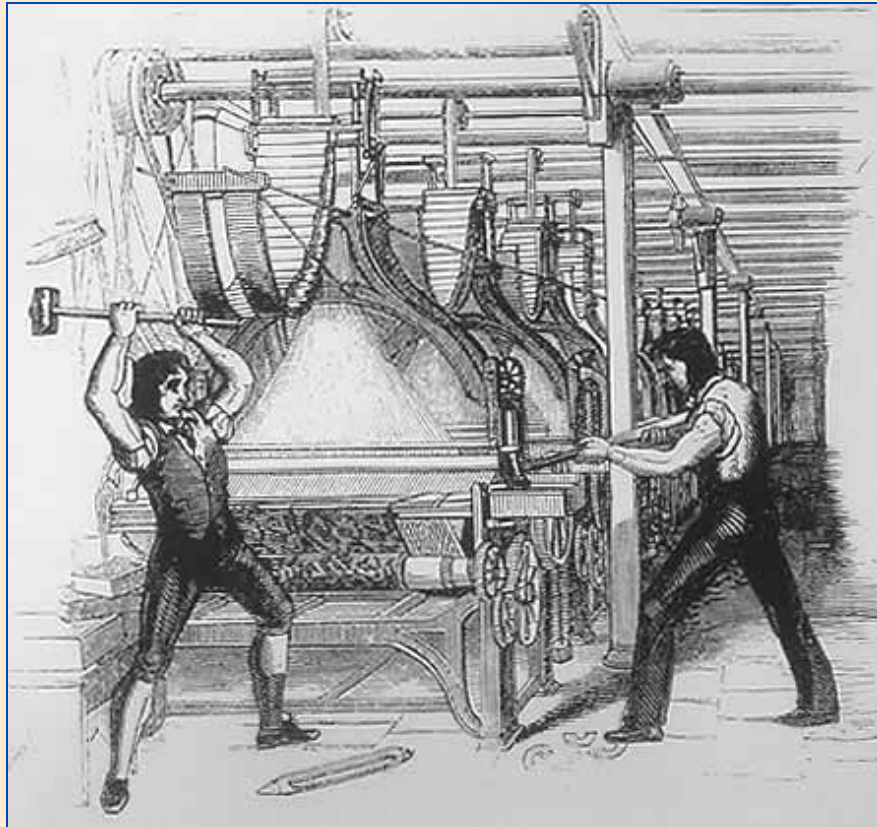
Private Charities: The “Lady Bountifuls”





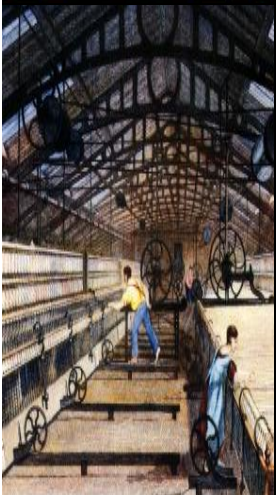
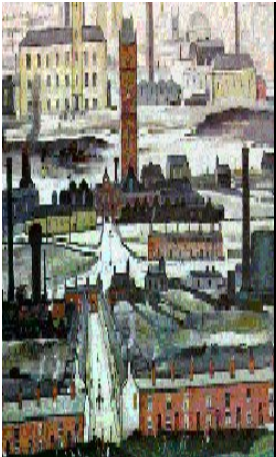
Protests / Reformers

The Luddites: 1811-1816



Attacks on the “frames” [power looms].

Ned Ludd [a mythical figure supposed to live in Sherwood Forest]



The Luddite Triangle





The Luddites

WHEREAS,
Several **EVIL-MINDED PERSONS** have assembled together in a
riotous Manner, and **DESTROYED** a NUMBER of

FRAMES,
In different Parts of the Country :

THIS IS
TO GIVE NOTICE,
That any Person who will give Information of any Person or Persons
thus wickedly

BREAKING THE FRAMES,
Shall, upon **CONVICTION,** receive

50 GUINEAS
REWARD.

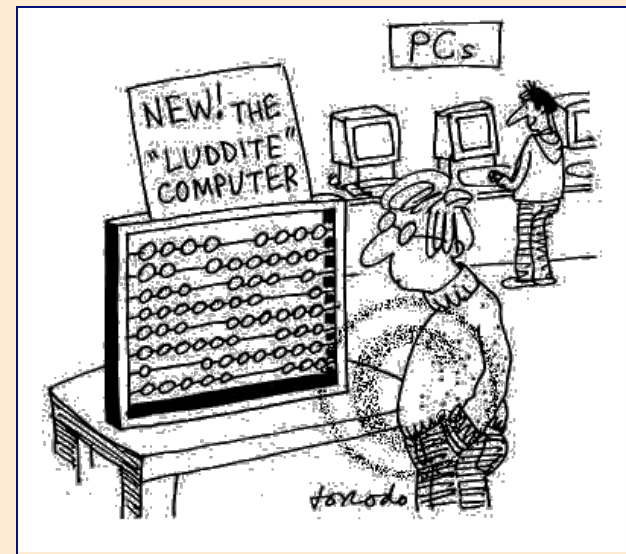
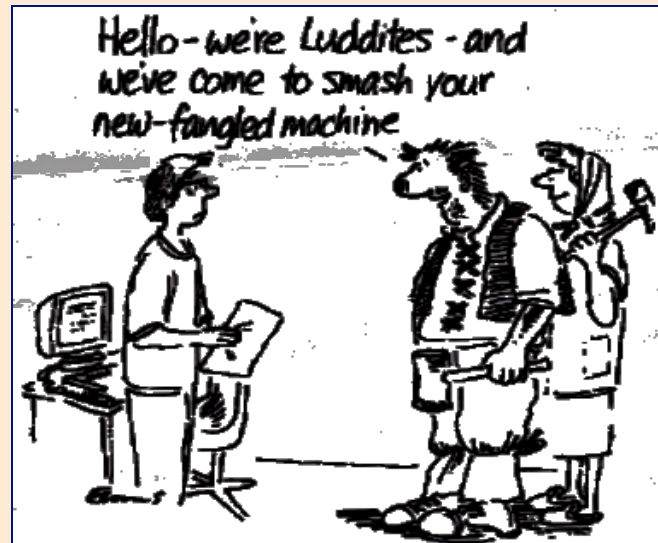
And any Person who was actively engaged in **RIOTING,** who will
impeach his Accomplices, shall, upon **CONVICTION,** receive the
same Reward, and every Effort made to procure his Pardon.

Information to be given to **Messrs. COLDHAM and ENFIELD.**

Norwich, March 26, 1811.

D. Paine, Printer, Norwich

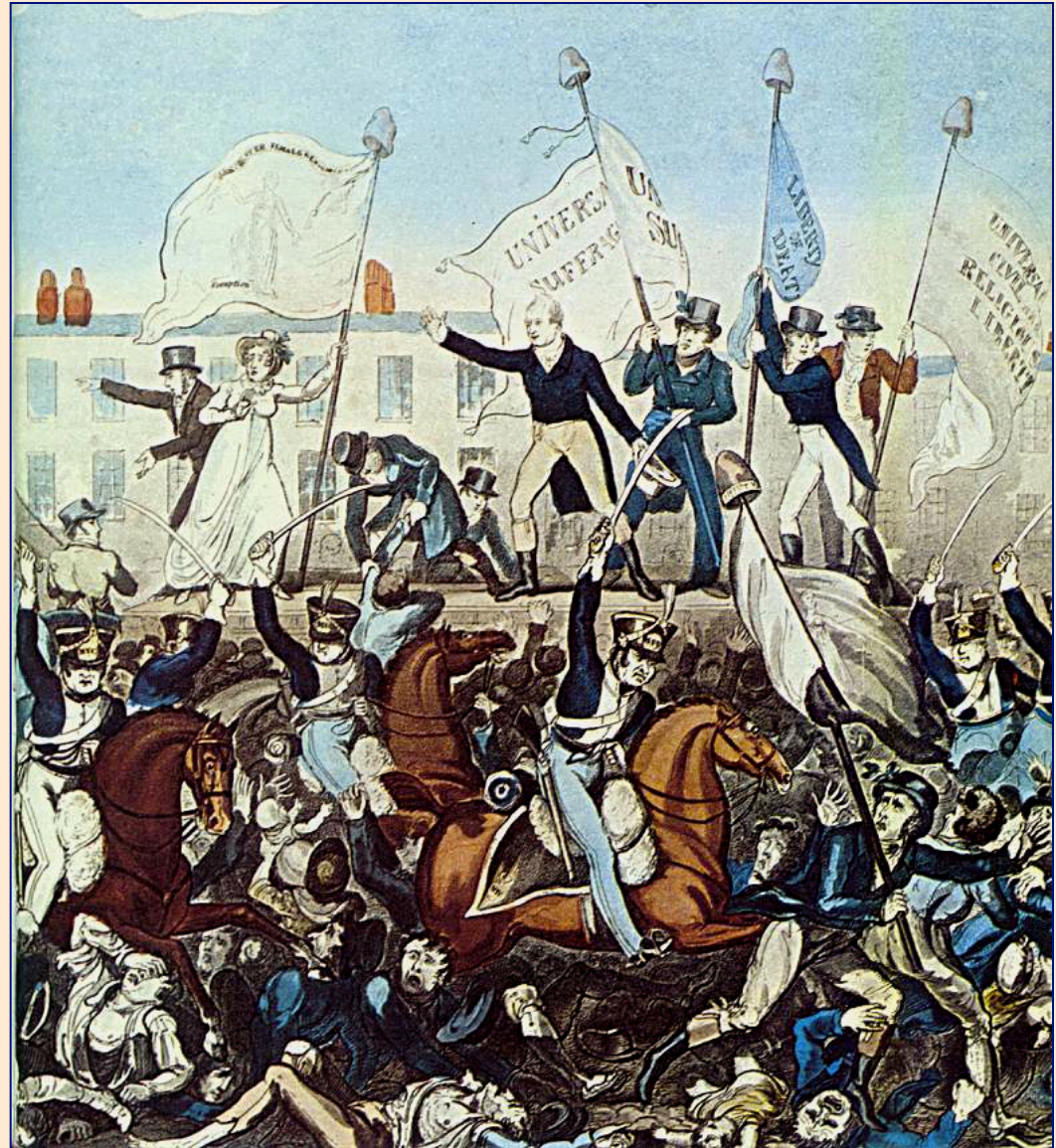
The Neo-Luddites Today



Peterloo Massacre, 1819

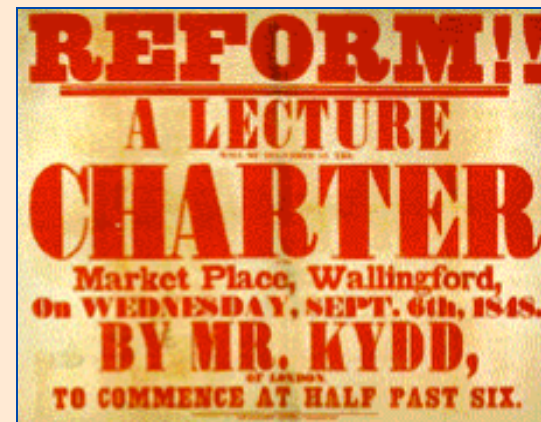
British
Soldiers
Fire on
British
Workers:




*Let us die
like men,
and not be
sold like
slaves!*





The Chartists



Key	
 Snig's End	Chartist settlements
 Swansea	Centres of Chartism
	Area of plug riots, 1842



The “Peoples’ Charter”

- ✓ Drafted in 1838 by William Lovett.
- ✓ Radical campaign for Parliamentary reform of the inequalities created by the Reform Bill of 1832.
 - × Votes for all men.
 - × Equal electoral districts.
 - × Abolition of the requirement that Members of Parliament [MPs] be property owners.
 - × Payment for Members of Parliament.
 - × Annual general elections.
 - × The secret ballot.

The Chartists



*A physical force—
Chartists arming for
the fight.*

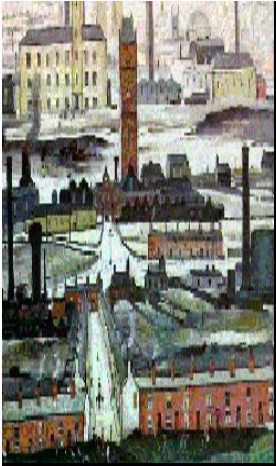
A female Chartist



Anti-Corn Law League,



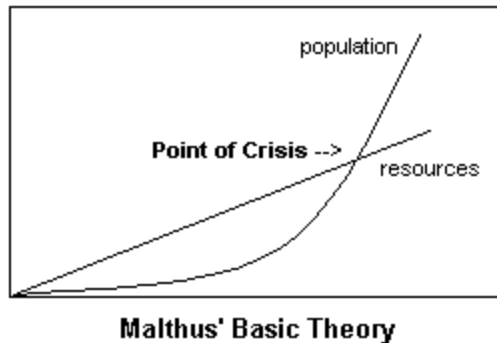
- 4 Give manufactures more outlets for their products.
- 4 Expand employment.
- 4 Lower the price of bread.
- 4 Make British agriculture more efficient and productive.
- 4 Expose trade and agriculture to foreign competition.
- 4 Promote international peace through trade contact.



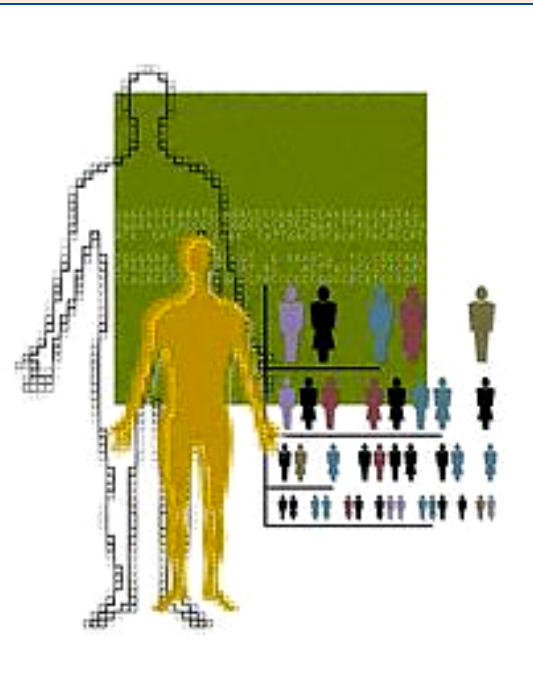


New Ways of Thinking

Thomas Malthus



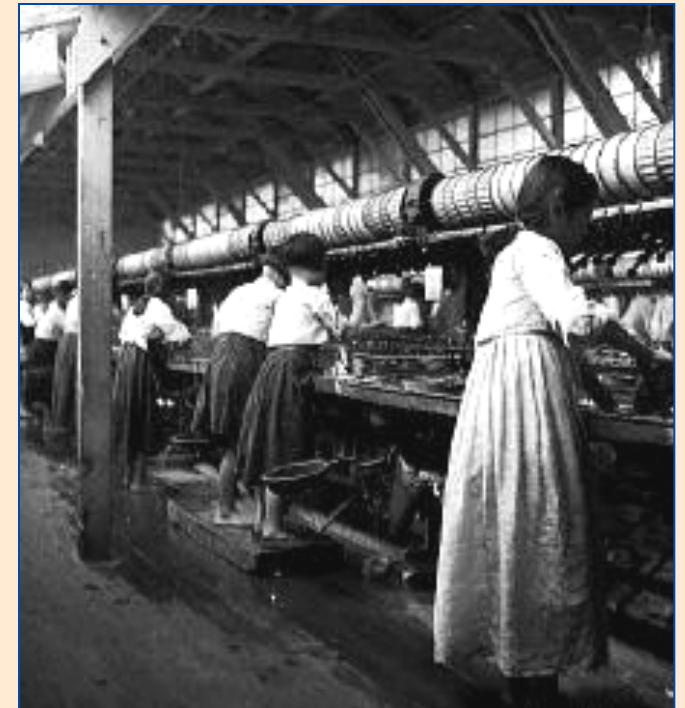
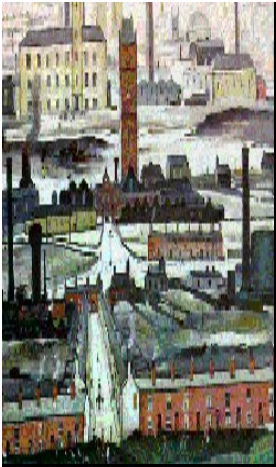
Malthus' Basic Theory

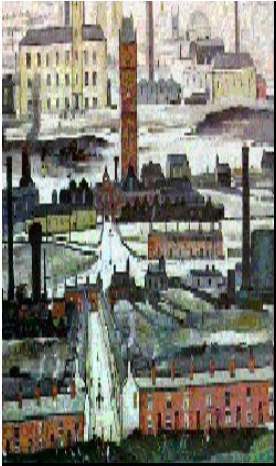


- × Population growth will outpace the food supply.
- × War, disease, or famine could control population.
- × The poor should have less children.
- × Food supply will then keep up with population.

David Ricardo

- × “Iron Law of Wages.”
- × When wages are high, workers have more children.
- × More children create a large labor surplus that depresses wages.





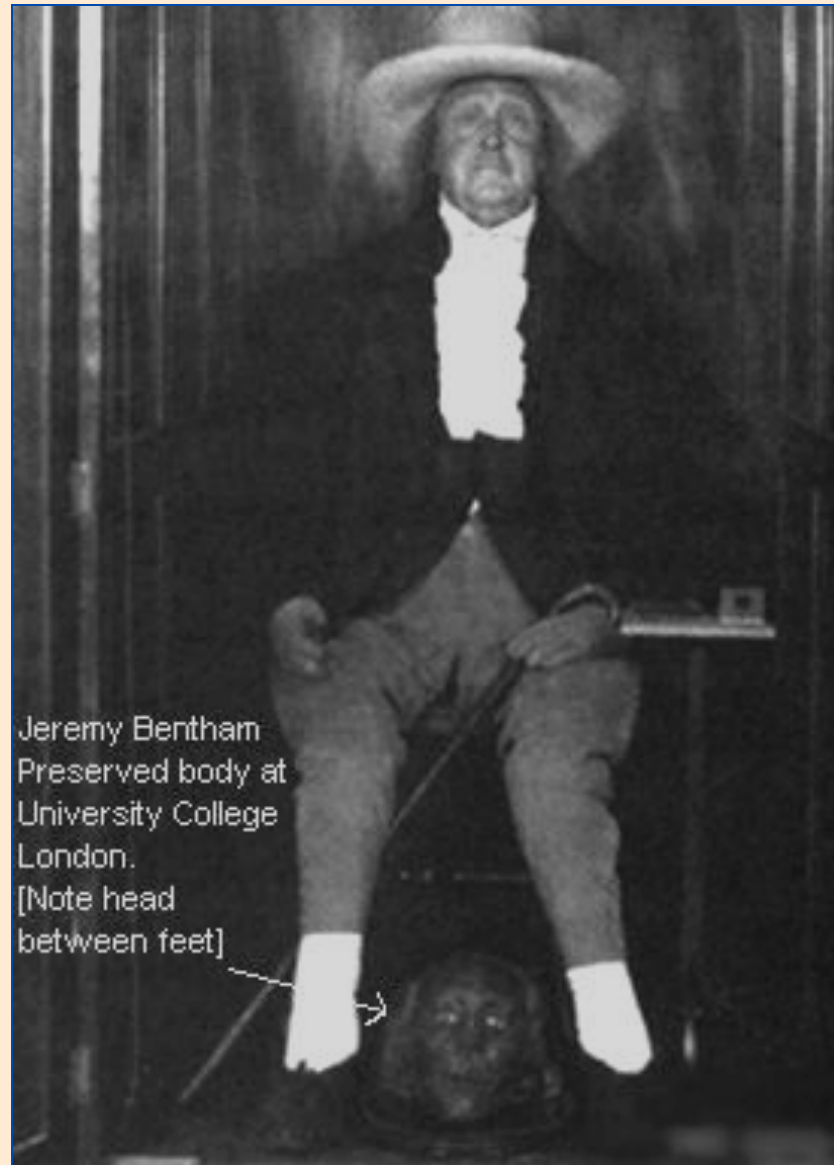
The Utilitarians:

Jeremy Bentham & John Stuart Mill

- ✗ The goal of society is *the greatest good for the greatest number*.
- ✗ There is a role to play for government intervention to provide some social safety net.

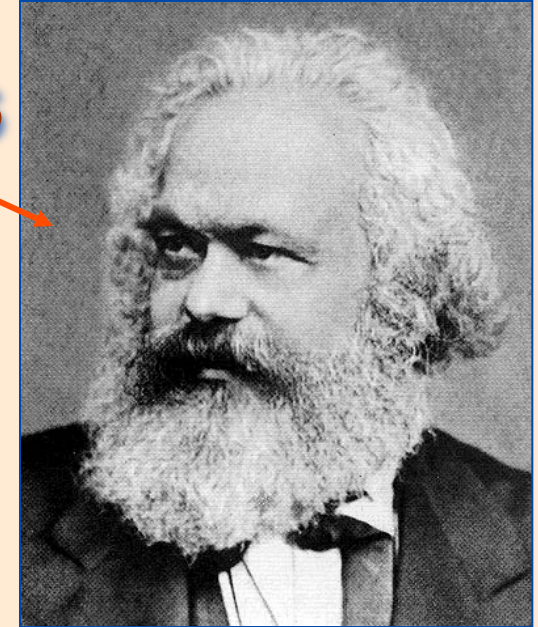
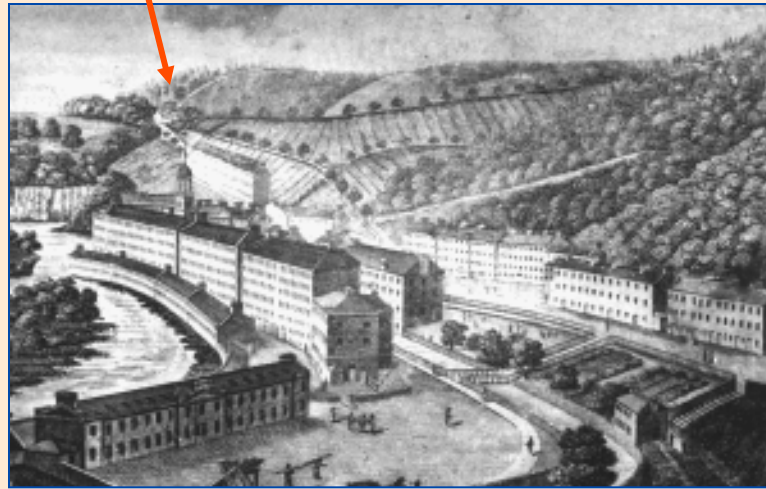


Jeremy Bentham



Jeremy Bentham
Preserved body at
University College
London.
[Note head
between feet]

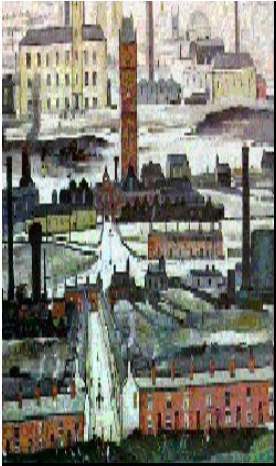
The Socialists: Utopians & Marxists



- × People as a society would operate and own the means of production, not individuals.
- × Their goal was a society that benefited everyone, not just a rich, well-connected few.
- × Tried to build perfect communities [utopias].



Br. Govt. Response to the Dislocation Created by Industrialization



Government Response

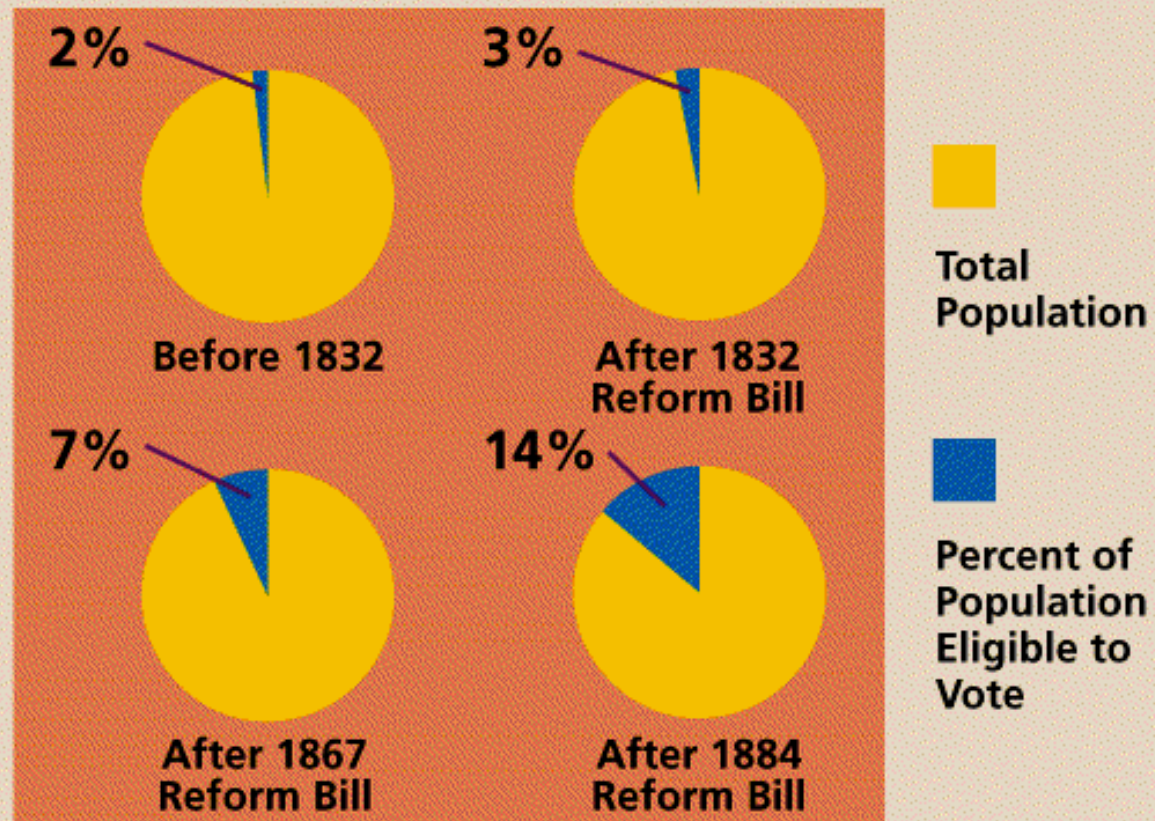
- k Abolition of slavery in the colonies in 1832 [to raise wages in Britain].
- k **Sadler Commission** to look into working conditions
 - **Factory Act [1833]** - child labor.
- k **New Poor Law [1834]** - indoor relief.
 - **Poor houses.**
- k **Reform Bill [1832]** - broadens the vote for the cities.

British Reform Bill of 1832



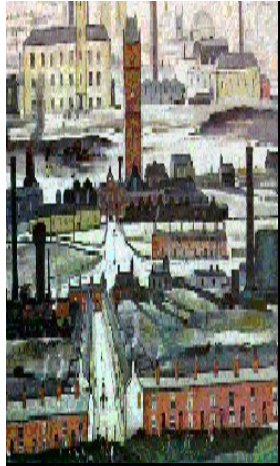
British Reform Bills

British Electoral Reforms





The Results of Industrialization at the end of the 19c



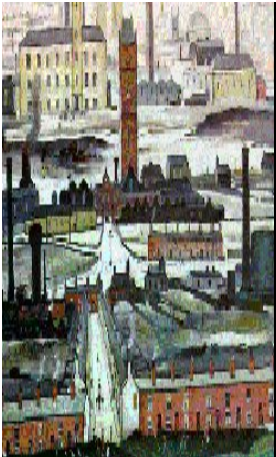
By 1850: Zones of Industrialization on the European Continent

- ù Northeast France.
- ù Belgium.
- ù The Netherlands.
- ù Western German states.
- ù Northern Italy
- ù East Germany → Saxony

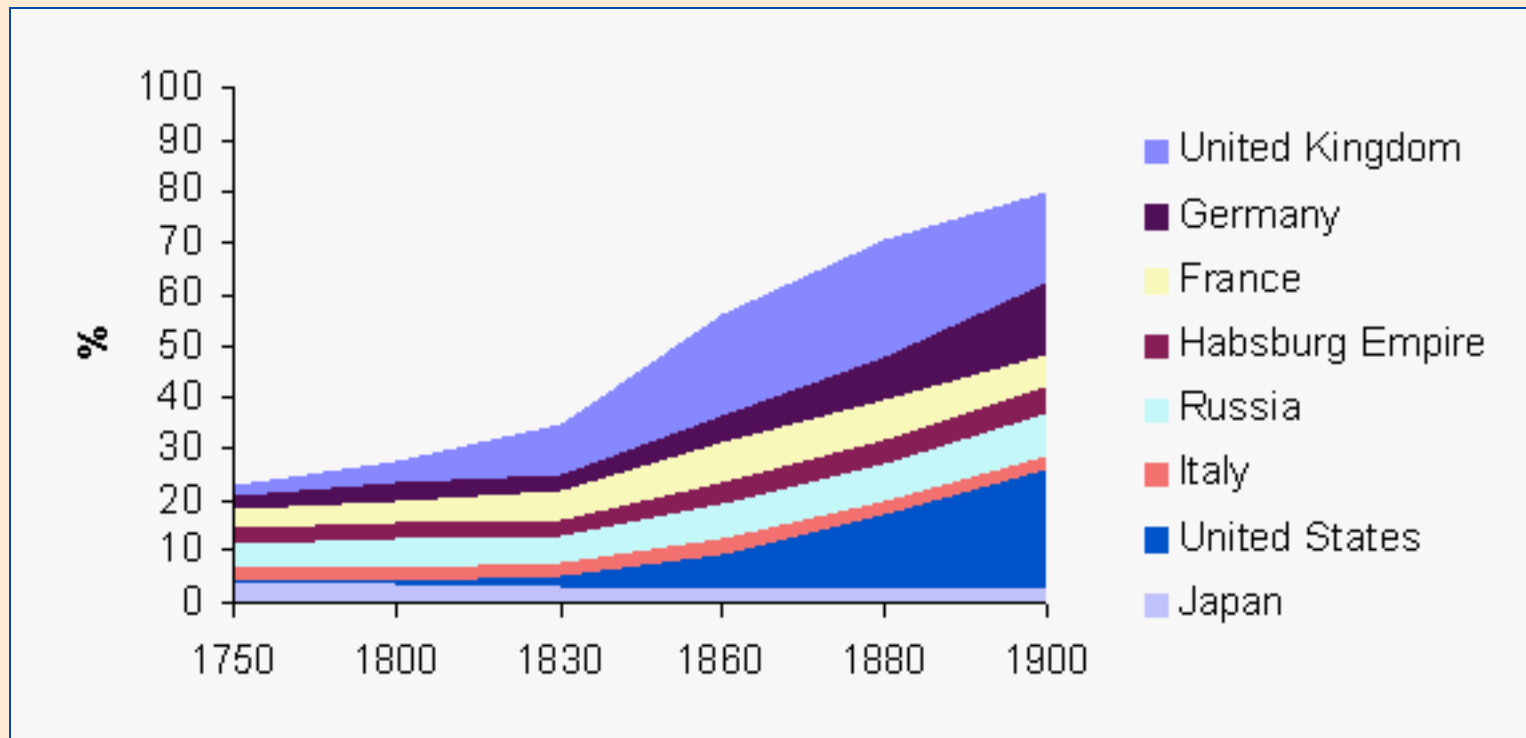
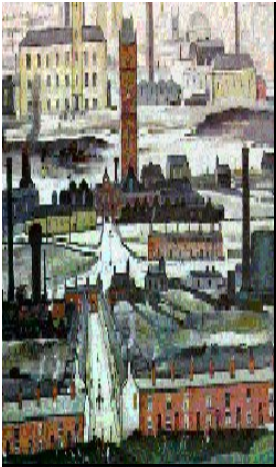
Industrialization By 1850



Railroads on the Continent



Share in World Manufacturing Output: 1750-1900





The Politics of Industrialization

- ù State ownership of some industries.
 -) RRs → Belgium & most of Germany.
- ù Tariffs → British Corn Laws.
- ù National Banks granted a monopoly on issuing bank notes.
 -) Bank of England.
 -) Bank of France.
- ù Companies required to register with the government & publish annual budgets.
- ù New legislation to:
 -) Establish limited liability.
 -) Create rules for the formation of corporations.
- ù Postal system.
- ù Free trade zones → Ger. *Zollverein*



Bibliographic Sources

-) **“Images of the Industrial Revolution.”**
Mt. Holyoke College. http://www.mtholyoke.edu/courses/rschwart/ind_rev/images/images-ind-era.html
-) **“The Peel Web: A Web of English History.”**
<http://dSPACE.dial.pipex.com/mbloy/c-eight/primary.htm>